
Evaluating Student Success Interventions

PRINCIPLES AND PRACTICES OF STUDENT SUCCESS

Rigoberto J. Rincones-Gómez, Ph.D.

Achieving the Dream colleges engage in a process of institutional improvement to increase student success. A central component of this process is engaging internal and external stakeholders to help develop and implement interventions or changes in programs and services that improve student success. To determine whether these interventions do indeed improve student outcomes, and what changes and refinements should be made to produce further improvements, colleges need to evaluate their interventions.

Achieving the Dream institutions are expected to develop plans for evaluating student success interventions before they begin their implementation. These plans should specify the collection and analysis of quantitative and qualitative data that will form the basis of the evaluation. The plans should also indicate how the results of the evaluation will be used to improve the effectiveness of the interventions.

Having the capacity to effectively evaluate student success interventions is necessary for meeting the expectations of funders, accreditation agencies, students, policy makers, and the public. It is essential for continuously improving the impact of programs and services on student learning and success.

This guide is designed to help colleges plan and conduct effective evaluations of their student success interventions.

What is Evaluation?

We are constantly evaluating. From the moment we walk into our offices, whenever we decide which e-mails to answer immediately or even when to schedule meetings, we are engaged in evaluation. When faced with a decision, we compare the available data with some criteria, and then we decide. When students try to decide whether to take a particular course, they consider various factors, such as the number of credit hours, the faculty teaching it, the schedule, how many students have failed or succeeded in the class, and whether it is required or merely an elective. These factors are the criteria upon which they base their judgment. Thus, an easily remembered definition for evaluation is: **Evaluation is a value judgment based on defensible criteria.**

The Program Evaluation Standards represent principles by which many institutions, evaluation offices, or teams measure their evaluation efforts. When evaluating an intervention, these standards are points of reference

used to determine, among other things, whether the intervention is producing the expected results, and whether there is room for improvement, if the intervention can be brought to scale, or if it should simply be terminated.

It is important to distinguish between assessment and evaluation, and between research and evaluation. These terms are frequently used interchangeably. Assessment generally refers to the process of determining the extent to which students have mastered some instructional objective or competency. Evaluation, on the other hand, uses the same information and other criteria not only to determine the extent to which a performance measure has been met, but also to compare it with other criteria in order to make a decision. This decision could include offering the student some supplemental instruction, suggesting that the student take a different approach to note-taking, or asking the student to retake the course. In short, a key difference between assessment and evaluation is that the latter involves a value judgment.

Evaluation and research also differ. Carol Weiss has identified 13 different ways in which evaluation and research differ. For example, evaluation is intended for use, while research produces knowledge and the natural process of dissemination determines its use. Evaluation compares what is with what should be, posing the question: does it meet the established criteria? Research, on the other hand, simply studies what is and what should be. In addition, evaluation takes place in an action setting where the intervention, rather than the evaluation itself, has priority. With research, the priority is given to the research itself and not to practical solutions.

Five Steps for Effectively Evaluating Student Success Interventions

In this guide, evaluation is presented as a five-step process:

1. Describe the intervention
2. Identify the evaluation questions
3. Complete the evaluation plan
4. Monitor the execution of the plan
5. Learn, share, and use the results.

The following provides details on each of the steps.

Step 1: Describe the intervention

Achieving the Dream colleges should clearly describe the interventions being evaluated, including their goals and objectives, target population, and duration. Intervention descriptions should clearly articulate how the intervention will bring about the desired outcomes in student achievement. A useful tool for accomplishing this is a logic model. A logic model is a graphical illustration of the actions and activities involved in an intervention and how they are expected to achieve the stated objectives. Logic models help teams implementing interventions to understand clearly the resources and time commitment that a particular intervention will require and the outcomes it is expected to deliver. A logic model is useful in helping define the questions to be answered through the evaluation.

Figure 1 shows the typical elements of a linear logic model:

Inputs are all the resources that are used during the life of an intervention. These include staff, time, money, material, equipment, technology, volunteers, partners, etc.

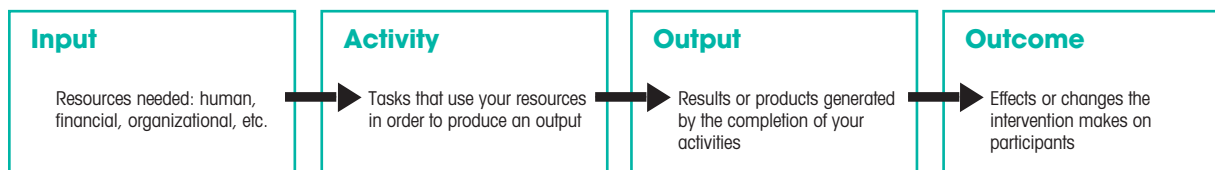
Activities are all the specific tasks executed during an intervention — for example, complete a literature review, train faculty, facilitate meetings, develop a new curriculum, or add new elements to the student orientation process.

Outputs are the direct results or products generated by the completion of activities. These are sometimes represented by a number or percentage of the results produced — for example, the total number of faculty attending the training, the percentage of workshops facilitated, or the percentage of faculty showing a satisfaction level of 80 percent or higher on their training.

Outcomes are the short-, medium-, and long-term effects or changes the intervention is designed to bring about. For example, these could include changes in participants' learning, actions, skills, or opinions (short-term); changes in behavior, social actions, or decision-making (medium-term); and changes in economic, social, and environmental conditions (long-term).

Figure 1

Typical Elements of a Logic Model



When developing a logic model for an intervention, consider following the typical “left-to-right” process for identifying the inputs, activities, outputs, and outcomes. Others prefer to “begin with the end in mind” and work backward, that is, they first identify the ultimate goals or outcomes the intervention is designed to accomplish and then identify the outputs, activities, and necessary inputs.

Figure 2 shows a logic model in the left-to-right format developed by the College of the Mainland, an Achieving the Dream institution in Texas.

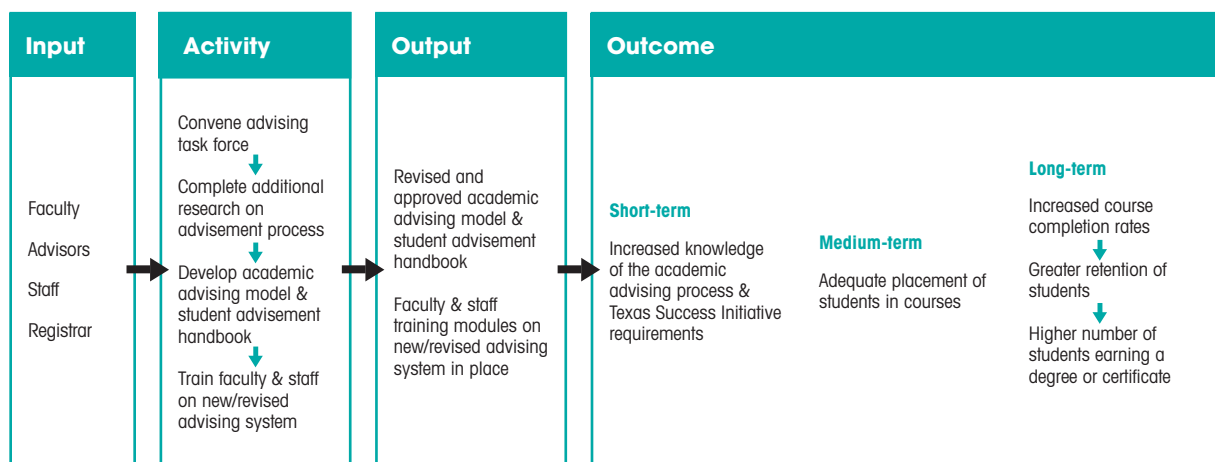
Logic models should illustrate the main steps involved in implementing interventions. Note that in the logic model below, College of the Mainland details the main activities

that will lead up to its training of faculty and staff. Additional steps could be added directly to the evaluation plan detailing how the faculty and staff are expected to implement this intervention across the college and how successful implementation will be ensured.

When developing logic models, institutions should be clear about the assumptions underlying the expected outputs and outcomes of the logic model. For example, College of the Mainland agreed on the following assumptions when developing the logic model for its advising system: *“The institution’s current view of the nature of advising, which tends to be narrowly focused on the student’s schedule for a particular term, will change dramatically, with much greater emphasis placed on placement in the correct*

Figure 2

College of the Mainland’s Logic Model for its Revised Advising System



Assumptions: The institution’s current view of the nature of advising, which tends to be narrowly focused on the student’s schedule for a particular term, will change dramatically, with much greater emphasis placed on placement in the correct courses, mentoring, etc. There will be a much-reduced reliance on part-time advisors during registration periods. As our culture changes to focus on student success and data-informed decision-making, our improvements may actually be exponential.

courses, mentoring, etc. There will be a much-reduced reliance on part-time advisors during registration periods. As our culture changes to focus on student success and data-informed decision-making, our improvements may actually be exponential.” This statement reveals the college’s overarching assumptions about how the advising model will change and what outcomes can be expected. Detailing the implementation team’s assumptions about how the intervention will work helps to frame the description of the intervention, which can be useful in communicating with others about what the intervention is trying to accomplish and how it is expected to do so.

Developing a logic model takes time, but once completed it provides a solid foundation on which to build an effective evaluation. There likely will be several rounds of revisions before a team will feel satisfied with its logic model. Achieving the Dream coaches and data facilitators can be a great help in facilitating this process.

A logic model should be seen as a picture-in-time of what an intervention may look like, as envisioned by the members of those who designed it. Logic models might change as interventions are implemented. Teams should review logic models at least twice a year, and make the necessary updates to reflect any changes made in the interventions.

Evaluating Student Success Interventions at College of the Mainland, Texas City, TX

The College of the Mainland (COM) in Texas City, Texas, a community college of approximately 4,000 students, joined Achieving the Dream in 2006. After completing an extensive review of longitudinal student cohort data complemented by qualitative data analysis, the college identified three student success priorities. These priorities included the revision of the academic advising system, the implementation of a first-year experience program, and professional development for faculty. The evidence gathered and the analyses completed suggested that the college develop interventions that could help close the gap in student achievement in each priority area.

The data about COM’s advising system indicated that the system was not functioning well enough to support student success. Essential to student success are enforcement of prerequisites, placement of students in the correct courses, and faculty-student engagement. To accomplish these goals, the college’s Achieving the Dream data team proposed to the core team a complete revision of the advising system, shifting from largely professional advisors to faculty, with appropriate training provided to support this revised advising model.

As shown in Figure 2, four activities were implemented to achieve this shift in the advising model: (1) establishment of an advising task force; (2) additional research on the advisement process; (3) the development of an academic advising model and a student advisement handbook; and (4) the training of faculty and staff on the new advising system. While these activities are key elements in shifting the advising responsibilities to faculty, they are not in themselves student success outcomes. Instead, the outcomes are the effects that the college hopes to achieve through the implementation of these activities. These outcomes are characterized in the logic model as short-term, medium-term, and long-term and include: (1) increased knowledge of the academic advising process and Texas Success Initiative requirements (short-term); (2) adequate placement of students in courses (medium-term); and (3) increased course completion rates, greater retention of students, and higher numbers of students earning a degree or certificate (all long-term outcomes). The assumptions or “theory of change” underlying the revision of the advising system are noted on the logic model.

Dr. Pam Millsap, professor of psychology and co-director of COM’s Achieving the Dream initiative, developed this brief description. She can be reached at pmillsap@com.edu.

Step 2: Identify the evaluation questions

Achieving the Dream encourages colleges to conduct two primary types of evaluations: formative and summative. During the start-up or pilot period of an intervention, colleges may find it useful to conduct *formative* evaluations. The goal of this work is to provide timely feedback to faculty, staff, and administrators on whether interventions are being implemented as intended, and to identify areas for improvement. Once an institution is reasonably assured that a program or policy has been implemented as intended, it should conduct a *summative* evaluation—that focuses on providing evidence to assist decision makers in determining whether an intervention should be continued, expanded, or eliminated. Robert Stake distinguished these types of evaluation by saying, “When the cook tastes the soup, that’s formative evaluation; when the guest tastes it, that’s summative evaluation” (cited by Scriven, 1991, p. 19).

Figure 3 shows the different questions that are asked when focusing on the *inputs*, *activities* or *processes*, and *outputs* of an intervention.

A logic model can provide a useful way to identify exactly where the team wants to focus the evaluation and, consequently, develop the evaluation questions.

To define the evaluation questions, a good place to start is to hold a brainstorming session in which those who are developing the intervention, along with the ATD team members, identify a list of possible questions about the inputs, process/outputs, or outcomes of the intervention. No judgment is made about the importance of one question over another.

Figure 3

Examples of questions based on the evaluation focus

Input	Process/ Output	Outcome
What resources are needed for starting this intervention?	Is the intervention implemented as intended?	To what extent are desired changes occurring? And for whom?
How many faculty or staff members will we need?	Are all participants being reached as intended?	Is the intervention making any difference? What seems to work? Not to work?

Using the College of the Mainland’s logic model as an example, questions that could be asked in a formative evaluation include:

- Do students, faculty, staff, and advisors understand the advisement process?
- What elements of the revised advising process are perceived as strengths?
- What materials produced in this new advising process proved to be most useful?
- What parts of the new advising process could be strengthened?

An example of a summative evaluation question is: Did the revised advisement process positively affect student persistence? Once the team is satisfied with the initial list of questions, it is time to select the most important ones. Team members might be asked to rank order the questions in the list. A useful tool for helping the team reach agreement on the final evaluation questions is shown in Figure 4.

The information provided in Figure 4 will help create a priority list of questions for the evaluation.

Step 3: Complete an evaluation plan

The most important tool for ensuring a successful evaluation is the evaluation plan. A well-developed evaluation plan helps clarify what is to be evaluated, sets priorities for allocating resources, estimates timelines, and specifies roles and responsibilities.

Achieving the Dream institutions vary in their capacity to plan and their skill in executing evaluations of their interventions. Colleges develop their evaluation plans in consultation with their Achieving the Dream coach and data facilitator. Data facilitators in particular have extensive experience with the use of evaluation methodologies, and are equipped with tools and resources to make this process easier.

Figure 5 shows the elements of an evaluation plan, Column A lists the main evaluation questions. Column B presents the expected outcomes that were identified in the logic model developed for this specific intervention. This helps highlight the relationship between the evaluation questions and expected outcomes. Column C

Figure 4

Example of information to identify final evaluation questions*

Evaluation question	Potential benefits of being able to answer this question	Feasibility of obtaining data needed to answer this question	Time and resources required to answer this question
Question			
Question			
Question			

* Determine your evaluation questions in column one then move left to right, completing the table to identify the final evaluation questions.

shows the specific tasks that need to be completed to answer each evaluation question. Column D is a list of the personnel who will be charged with the execution of the evaluation task. Column E indicates the timeline for executing each task. Column F lists the data sources for the information that will help answer each evaluation question.

Column G presents how the data collected will be analyzed. It also lists the methods that will be used to analyze the data (e.g., descriptive statistics, t-tests, one-way ANOVA, etc.). Column H on *Reporting* relates to how, when, and with whom the evaluation results will be shared.

The data used for an evaluation depend on the questions to be answered. Quantitative data normally help you answer the “what” of your evaluation questions. Qualitative data help you answer the “why” of your evaluation questions.

For example, when developing and implementing a new student orientation process, a college may have a formative evaluation question, such as: *How helpful was the advisement training for faculty and staff?* In order to answer this type of question, a college might develop a survey for faculty and staff who participated in the training to find out which parts of the training were most or least useful and how they incorporated what they learned into their

Figure 5

College of the Mainland Evaluation Plan

A. Evaluation Questions	B. Expected Outcomes	C. Tasks	D. Personnel	E. Timing	F. Data Source	G. Analysis	H. Reporting
To what extent do faculty, staff, and advisors understand the advisement process?	Increased knowledge of academic advising process and Texas Success Initiative requirements	Develop survey instrument to assess the effectiveness of the training Administer survey to faculty and staff	Data team, IR staff	At the end of each training session	Data gathered through survey	Descriptive statistics	ATD core & data teams; part- and full-time faculty, staff, and advisors To be shared during data & core team meetings as results become available
What elements of the revised process are perceived as strengths? What needs for improvements were identified?	Areas in need of improvement will be addressed	Develop survey instrument(s) Administer survey to students, faculty, and staff Develop protocol for focus groups Train facilitators Conduct focus groups with faculty, staff, and students Analyze focus group data Review results with faculty and staff, and discuss areas in need of improvement	IR staff, data team, evaluation committee	Spring	Data gathered through survey and focus groups	Descriptive statistics and summary of results from focus groups	Core & data teams; full- and part-time faculty, staff, and advisors To be shared at the end of spring or during summer semesters
To what extent did the revised advisement process positively affect student outcomes?	Increased successful course completion rates Increased retention of students Higher number of degrees and certificates awarded	Collect and track data on course completions Collect and track data on student retention Collect and track data on awards	Data team, IR staff	Fall and winter semesters	Student database system	Longitudinal and cross-sectional analyses	Core & data teams, faculty, and administrators To be shared at the end of fall and winter semesters

work with students. This type of evaluation question seeks to explain how well an intervention worked and provide insight into how it could be further revised or improved.

A college also might want to ask summative evaluation questions, such as: *What are the differences in student success among subgroups of students who attended the new student orientation?* This question suggests designing an evaluation that tracks a cohort of students who received an intervention and comparing that to a cohort of students who did not. For example, to assess the impact of a revamped new student orientation on student success in the first term, the college could compare the first-term course completion rates for new students who went through the new orientation with the course pass rates for students from previous entering cohorts with similar characteristics (e.g., age, gender, race) who went through an earlier version of orientation. This type of evaluation method seeks to measure what resulted from the intervention.

Step 4: Monitor execution of the plan

Once the evaluation plan has been completed, it is time to start monitoring its execution. It is recommended that one person, perhaps the Achieving the Dream core or data team leader, be responsible for monitoring the plan and keeping it up to date. For example, College of the Mainland's teams developed a detailed work schedule for the evaluation of its interventions (see Figure 6). A work schedule is an important tool for monitoring the execution of the evaluation. It also informs the decision-making processes about the resources being used and the potential changes that need to take place during the evaluation.

In a work schedule like the one below, each activity in the evaluation plan is broken down into specific tasks. Individual faculty and staff members are identified as being primarily responsible for the completion of each task. In this way, it is easy to monitor the progress of

Figure 6

Sample Evaluation Detailed Work Schedule: College of the Mainland

Year	Semester	Target Date	Task #	Task	Date Team	Other Personnel	Date Completed
07-08	Fall 07	Nov	1	Collect and track data on student retention F-06-Spr 07 and F-06-F-07	IR REP	IR	Feb 08
07-08	Fall 07	Dec	1	Collect and track data on 2007 awards	IR REP	IR	Dec 07
07-08	Fall 07		1.a	Develop instruments to assess the effectiveness of advisement training	FAC & IR REP	Advising Task Force	Oct 07
07-08	Fall 07		1.a	Administer advisement training instrument to faculty and staff	IR REP	Advising Task Force	Nov 07
07-08	Fall 07		1.b	Communicate with Faculty and Staff about how to provide their feedback	FAC & IR REP		Nov 07
07-08	Fall 07		1.b	After communication with Faculty and Staff, an appropriate method will be selected to assess strengths and weaknesses of the advising process	FAC & IR REP		Nov 07
07-08	Fall 07		1.b	Develop survey instrument to assess strengths and weaknesses of revised advisement process (if deemed necessary)	FAC & IR REP	Advising Task Force	NA

evaluation activities and hold team members accountable for completing the work in a timely fashion.

It is important to note that neither the logic model nor the evaluation plan should be seen as set in stone. Continuous reviews and updates are highly encouraged as the interventions change direction based on the experience of those implementing the intervention and the findings from the evaluation itself. Institutions are encouraged to update their logic models and overall work plans at least twice a year.

Step 5: Learn, share, and use the results

Team members gather data that can help them learn whether an intervention is producing the desired outcomes and how its effects can be improved. What colleges learn from evaluations can be very informative to those involved in implementing interventions as well as others who are not directly involved, but are seeking ways to improve student success. However, an evaluation is only successful if the results are used. Not using the results of an evaluation would mean a waste of resources (i.e., time, money, material, students' efforts, completed research) invested in conducting it. Even if evaluations do not show the expected results, they still can be of value. They might provide an opportunity for implementers to regroup, revisit, and propose a new course of action, including modifying the intervention if necessary, adding

new data-gathering strategies, or enlisting the help of an outside professional evaluator.

To ensure that the results from evaluations have a positive impact on student outcomes, colleges need to communicate the findings of evaluations broadly and convene groups of faculty, staff, and administrators to review the results and discuss the implications for improving institutional policy and practice. Ideally, there is a give-and-take in which the practitioners reflect on how to use the evaluation findings to continue improving programs and services, and those in charge of the evaluation continue evaluation activities to see whether the attempted improvements actually produced the desired results. Sharing evaluation results widely and encouraging their regular use for improvement are key steps in building a “culture of evidence” to increase success for college students.

Rigoberto J. Rincones-Gómez works at MDC and is the director of data facilitation for the Achieving the Dream initiative. He brings over 14 years of national and international experience on research, evaluation, and institutional improvement from different fields (i.e., private, non-profit, higher education). He also works as a data facilitator for two colleges in Texas and one in South Carolina.

Additional Resources

Fitzpatrick, J. L., Sanders, J. R., & Worthen, B. R. (2003). *Program Evaluation. Alternative Approaches And Practical Guidelines* (3rd ed.). Boston: Pearson Education, Inc.

Gugiu, C. & Rodríguez-Campos, L. (2007). Semi-Structured Interview Protocol For Constructing Logic Models. *Evaluation And Program Planning*, 30 (4), 339–350.

Joint Committee on Standards for Educational Evaluation (1994). *The program evaluation standards: How to assess evaluations of educational programs*. Thousand Oaks, CA: Sage Publications, Inc.

Kirkpatrick, D. L. & Kirkpatrick, J. D. (2006). *Evaluating training programs: The four levels* (3rd ed.). Newbury Park, CA: Berrett-Koehler Publishers.

Rodríguez-Campos, L. (2005). *Collaborative evaluations: A step-by-step model for the evaluator*. Tamarac, FL: Lumina Press.

Scriven, M. (1991) *Evaluation Thesaurus* (4th ed.). Newbury Park, CA: Sage Publications, Inc.

Stufflebeam, D. L. & Shinkfield, A. J. (2007). *Evaluation theory, models, and applications*. San Francisco: John Wiley & Sons, Inc.